582-275
ITEM 16
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3/23/60

Substitute

SYNTHETIC TOBACCO - LTF - AEROSOL THERAPY

R+D

When I was at the RD on March 16 and 17, 1960, I was interviewed by several persons regarding the above subject including Dr. Seligman, Messrs. William Danker and Henry B. Merritt and also Louis Long.

The subject is called primarily LTF (low tar filler) but it is related to the BL and ATBL subjects. The subject of LTF has received some particular impetus recently because of inquiries from some source (Dr Edgar Mayer ?) proposing that Philip Morris make a cigarette which is free from the irritating aerosols of tobacco and can provide a carrier for purely therapeutic compounds. It could also serve as a carrier for any compound whereby only that single compound in essence is contained in the aerosol and its effect or flavor can be independently evaluated.

One specific aspect of the matter relates to the proposed use of bentonite as a binder or perhaps inert filler; for example to replace part of the CMC binder in BL. Philip Morris is concerned as to whether it would infringe any existing patents such as one or more of the Frankenburg patents. This specific aspect will be considered and treated separately.

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Source: https://www.industrydocuments.ucsf.edu/docs/pykj0000

In one sense the LTF project may be considered to be approached from the synthetic tobacco (i.e. entirely non-tobacco); or in another sense from the BL material which definitely contemplates a large percentage of tobacco in or on an adhesive binder.

Most of the details of the proposition were given me orally by Mr. Merritt. He started out by giving me the general formula for BL as follows:

pulp (stems)
binder (CMC)
plasticizer (glycerine e.g.)
inert filler (AlO_2 bentonite etc.)
insolubilizers (pH - HCMC)
ground tobacco

The general formula for LTF he gave me as follows:

LTF (Low Tar Filler)

1.	Fiber	glass cellulose - stems, wood, flax etc. synthetic materials asbestos toxic (?) silica toxic (?)
2.	Binder (adhesive)	cellulose gum (CMC) methyl cellulose, hydroxycellulose galactomannan bentonite pectins
3.	Color	water soluble food colors

(the color would have to be destroyed in combustion and not stain ash - i.e. keep the natural gray color)

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4.	Combustible	tobacco cellulose - ground carbon sugars (?)
		(carbon is hot)
5.	Active agents	catalysts salts to control burning moisture delivering agents etc.
6.	Flavor	same as tobacco & more so
7.	Inert Filler	calcium carbonate alumina ores (bauxite etc.) diatomaceous earth clays

As specific examples he gave me the following:

Example I

5 - 15%	gum - methylcellulose	(combustible)
1 - 5%	silica fibers (LOF) 1 micron dia.	
2 - 3%	coloring	
1 - 4%	Plasticizer - Lithiium chloride	
balance	Calcium carbonate	

The above could be used up to perhaps 60% of the total but 40% or more should be tobacco to furnish a combustible.

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Example II

binder	5 - 10%	gum (equal proportions of CMC and methocel)
fiber	5 - 15%	bleached sulphite pulp (paper pulp with 100 freeness on Canadian scale)
plasticizer	2 - 10%	glycerine
combustible	2 - 10%	carbon
film former	3 - 5%	bentonite (film forming) (tends to give ash strength - hold together)
active ~~agt~~ agt	30 - 40%	hydrated activated alumina
	5 - 10% (?)	flavor
	2 3%	color
inert filler	balance	$CaCO_3$

Ex. II could be used

100% i.e. without any tobacco

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The patent to Siegel 2,907,686 is very pertinent particularly with respect to compositions similar to Ex. II embodying carbon. (Some of the claims e.g. cl. 2 could very well be infringed).

My report of 11/17/58 contains references to prior art of some interest, but no patent is cited therein of a purely synthetic tobacco substitute.

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Source: https://www.industrydocuments.ucsf.edu/docs/pykj0000

Subsequent to the conference with Mr. Merritt I talked with Mr. Danker who was specifically concerned with the therapeutic aerosols and mentioned various compounds which could be embodied in, for example, the LTF. These compounds would be vaporized by the heat into the smoke by distillation or explosion. The cigarette or body in which the aerosol ingredient is embodied must include a material which will burn, such as carbon. The compound must be capable of distillation into the smoke screen and not burned or broken down or decomposed.

The LTF should be low in cellulose particularly as to the part which is combustible for the basic reason of getting away from irritating compounds such as iso-propynol, methanol etc. In general the smoke from the cigarette should be tasteless and non-irritating. It could be used to evaluate flavors or the pharmacological action. The material could be an energizer or conversely a tranquilizer, etc.

Mr. Danker has summarized the objects in his letter of March 18, 1960 as follows:

"1. To provide an inhalent aerosol generator with a flavor pleasant to smoker.

2. To provide an inhalent aerosol generator for introducing antihistamines into mouth, nose, trachea & lungs.

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3. To provide an inhalent aerosol generator for introducing soothing agents into the Respirator tract.

4. To provide an inhalent aerosol for introducing tranquilizers into the body.

5. To provide an inhalent aerosol for introducing Psychic Energizes into the respiratory tract.

6. To provide an inhalent aerosol for introducing antiseptics into the mouth, nose pharynx lalynx trachea brolclyioles and deepest parts of the lungs."

Mr. Danker gave me a copy of an article entitled "Atropine Cigarettes in Asthma" from the British Medical Journal for August 15, 1959, and since then I have received in the mail from him an article entitled "Drug Administration by Means of Cigarettes" which also bears the heading "Medicated Cigarettes" which discusses at length aerosol therapy and particularly by means of cigarette smoke.

I also have a copy of a patent to Siegel 2,907,686 covering a tobacco substitute composition. The patent should be studied along with other prior art we have on synthetic tobacco.

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I obtained from Dr. Seligman a package of "Pages Inhalers" (see box of cig. samples) made by Consolidated Chemical Co., Grand Rapids. They contain e.g. stramonium leaves.

My report of November 17, 1958 cites Br. Davies 7594 of 1910 which describes a "medicinal smoking mixture" comprised of pre-boiled dried hops to which flavor or medicinal material is added and also carbon and yeast.

Br. 459,942 of 1937 proposes plant leaves coated with medicaments.

I queried several at R & D as to what cubebs were composed of but no one knew. I understand they can still be purchased at drug counters. a plant see dictionary and Census used to make cigs.

I shall ask in the Patent Office sometime if they know the composition.

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